

GEC - 4243
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6 December 1962

Dear Kelly:

Subject: Type III (Reworked B) Camera

1. Your memorandum of 28 November on the above subject appears somewhat oversimplified in reaching the conclusion that another "B" camera modification should be accomplished.

a. The assumption that there will be no thermal degradation in the "O" vehicle based on the recent X-15 tests is not necessarily valid since the lens, camera and film used in the X-15 provided a system resolution of only 63 lines/mm at high contrast. The small aperture, narrow angle and relatively short focal length of the camera used cannot be compared directly with the Type III camera. The mission length was less than seven minutes of which only four minutes were in excess of Mach 2.0, a temperature, time environment history that is difficult to correlate with the "O" vehicle mission. The X-15 tests, however, are most encouraging.

b. The Type III camera on test #3, run #5, had one frame that yielded 51 lines/mm at high contrast on axis, in the direction of flight. While it is true that a plot of runs, 4, 5, 7, and 8 on test #3, indicate that the system is vehicle limited (pitch, roll, yaw and vibration) rather than lens limited, and that better results might be expected in the "O" vehicle, it is also true that the slow speed of the lens ($f/10$) limits the system to high speed low resolution film, particularly with "O" speeds.

c. It is expected that the Type I system will deliver 180 lines/mm and the Type II system 145 lines/mm in the "O" vehicle which according to your comparative analysis will yield 0.8' and 1.0' ground resolution respectively from 80,000' altitude rather than 1.5' as shown.

2. The above observations should in no way detract from the excellent job that [redacted] has done in accommodating the "B" camera to the "O" vehicle mission and environment for a "back-up" system, however, it is our

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feeling that the Type III camera is only a "back-up." In view of the limited number of "B" cameras in the inventory and the apparent potential of the Type I and II systems it is not thought advisable to convert another "B" camera to Type III at this time.

Sincerely,

John

Attachments:

Ltr from CLJ to JP
same subject

DD/OSA [redacted]

Distribution:

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